

Date: Tue, 27 Sep 94 04:30:23 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #322
To: Ham-Ant

Ham-Ant Digest Tue, 27 Sep 94 Volume 94 : Issue 322

Today's Topics:

2 Meter SWR meter schematic????
2m vertical in my tree - how to?
cell phone directional antenna?
 Discone + whip
Grounding and Lightning Protection (3 msgs)
 NEC from DXF files?
 Slinky antenna anyone?
 Wanted Cushcraft R-3
What is a Good Satelllite Antenna (2m/440)
 Yagi Antenna for UHF TV

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>

Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 26 Sep 1994 13:02:24 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!wa4mei!
ke4zv!gary@network.ucsd.edu
Subject: 2 Meter SWR meter schematic????
To: ham-ant@ucsd.edu

In article <Cwq231.J6H@rahul.net> Mike Lyon <mlyon@rahul.net> writes:
>

>does anyone out there by chance have a schematic for a swr meter for 2
>meters? or know of a place where i can get one?

The RSGB VHF UHF Book has a project that makes one out of some standard
copper plumbing fittings and some hobby shop brass. I built it, it works

about as good as a Bird if you build and calibrate it carefully. It's the perfect thing to leave in-line all the time. However, Radio Shack, of all people, sells a nice little portable instrument that works fine at 2 meters.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

Date: 26 Sep 1994 02:19:17 -0700
From: nnntp.crl.com!crl.crl.com!not-for-mail@decwrl.dec.com
Subject: 2m vertical in my tree - how to?
To: ham-ant@ucsd.edu

optronic@gate.net (Bob Bronson) writes:

>The highest point of my lot is an oak tree. It is a good 20' higher than
>my roof peak. Two reasons for considering placement in the tree are: 1)
>homeowners assoc. prohibits antennas on roof, & in tree it will be
>somewhat hidden. 2) it's there and higher already. Has anyone made tree
>installations? I would interested in hearing about it. I would expect a
>slight loss being mounted against a 5-8" dia. live tree trunk compared to
>free air. I'm looking at something like the Cushcraft ringo ranger 2
>vertical. Thanks for any comments,

>Bob B. KE4PGM optronic@gate.net

I have a pine tree in my yard that has been topped off for reasons unknown. I placed a ringo ranger 2 on a radio shack pipe giving an antenna about 70 feet up. I was careful to clear the top of the tree. When I mounted it, I found two small (3 in. diameter) limbs, and used a chimney mount kit (radio shack) to mount the vertical pole about 18 inches from the main tree. This allowed for fine tuning the vertical positioning of the antenna. The ringer ranger 2 at 70 feet is very good.

mick
(ac6eu)

Date: Mon, 26 Sep 1994 17:13:55 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!
sdd.hp.com!col.hp.com!srngenprp!glenne@network.ucsd.edu

Subject: cell phone directional antenna?
To: ham-ant@ucsd.edu

hayden@abq-ros.com (hayden@abq-ros.com) wrote:

: IH>avery125@delphi.com meinte am 09.09.94
: IH>zum Thema "Re: cell phone directional antenna?":

: IH>> >Does anyone have plans for a homebuilt directional cell antenna?

: Try locating a program called Yagimax. It is a Yagi antenna design
: program. The problem you'll have will be in matching the |Z| of the
: antenna connector and line loss in you coax. Keep it short (coax) and
: have fun. 73's DE N5UJJ Jeff

You might be interested in a design I did which is located on
col.hp.com ~/hamradio/packet/n6gn/antennas

A first pass of a 902-928 MHz design I did from the NBS data was centered at about 850 MHz and should make a pretty decent antenna in that range. The gain bandwidth of the antenna itself is practically 100 MHz, this from measurement of a pair of them with a network analyzer over a reasonable antenna range. The bandwidth of the match is not bad, I used a folded dipole feed with impedance transformation, but not as wide as that of the antenna itself. Still I suspect that it would be very usable in that range even with a little mismatch loss included. Fabrication is from standard copper water pipe and 1/8" brazing rod.

BTW, yagimax does not appear to accurately predict the performance of this antenna. I didn't do the simulation myself so can't comment more except to say that I have high confidence in the results since multiple measurements were made in a variety of ways over paths of 50' to 75 miles. These measurements were in close agreement and showed the 13-15 dBi sort of performance that the NBS data predicted.

Glenn Elmore n6gn

amateur IP: glenn@SantaRosa.ampr.org
Internet: glenne@sr.hp.com

Date: Mon, 26 Sep 1994 10:09:27 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!
newsfeed.ksu.ksu.edu!moe.ksu.ksu.edu!osuunx.ucc.okstate.edu!
merlin@network.ucsd.edu
Subject: Discone + whip

To: ham-ant@ucsd.edu

Could someone tell me the best way to attach a whip antenna to a Radio Shack (20-013) discone? Need to get those lower freqs. Thanks for any help.

merlin- <merlin@osuunx.ucc.okstate.edu>

Date: Mon, 26 Sep 1994 12:45:26 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: Grounding and Lightning Protection
To: ham-ant@ucsd.edu

In article <364v0l\$r5n@dartvax.dartmouth.edu> Kenneth.E.Harker@Dartmouth.Edu (Kenneth E. Harker) writes:

> I've become very interested in how to provide the best ground and
> lightning protection for my station. I am living in my fraternity this
> year, and would very much not like to see it get fried because of my
> amateur radio activities.

> * I cannot install a bulkhead panel or anything like that.

> B Use something like a PolyPhaser IS-50NX in the coax. My big
> question

> is where in the chain to put this? Should I put it outside my
> room,

> say at ground level, and bolt it to a ground rod there, and
> have

> another run of coax back up to my room? Or make a wooden
> "bulkhead"

> to fit in the bottom of my window sill and drop copper strap
> down to

> ground? Is it not a really bad idea to have the protector
> inside the

> room? Is wood a poor choice of insulator for this application?

Yes you can install a bulkhead panel, but you'll have to make it. Just make a metal panel (instead of wood) that will fit in the window with the window closing down on it. A rack panel, or a chassis box can be used, in a wooden frame if necessary to fit the window. Bring your coax through that panel with a NEMP series suppressor, and run your ground strap from the panel down to your ground rod (bury as much copper as you can along the side of the house containing the rod. It doesn't

have to be real deep.)

Use that metal panel in your window as your station single point ground. Tie your power third wire to the panel too, and use a power line suppressor at the panel if you can afford it. (I strongly recomend this.)

This isn't perfect, but it's about the best you can do short of doing it right. If you keep everything reasonably straight and well bonded, it should give good protection.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

Date: 26 Sep 1994 20:02:26 GMT

From: pa.dec.com!nntpd.lkg.dec.com!iamu.chi.dec.com!little@decwrl.dec.com

Subject: Grounding and Lightning Protection

To: ham-ant@ucsd.edu

In article <1994Sep26.124526.16680@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary Coffman) writes:

|>Yes you can install a bulkhead panel, but you'll have to make it.
|>Just make a metal panel (instead of wood) that will fit in the window
|>with the window closing down on it. A rack panel, or a chassis box can
|>be used, in a wooden frame if necessary to fit the window. Bring your
|>coax through that panel with a NEMP series suppressor, and run your
|>ground strap from the panel down to your ground rod (bury as much copper
|>as you can along the side of the house containing the rod. It doesn't
|>have to be real deep.)

I've heard comments before to the effect that your ground rods should be deep. How important is that?

Also, is there any reason not to use 3/4" type L (the medium weight stuff) copper pipe? I've found that in general I can drive a 10' section into the ground and it costs less than a 1/2" or 5/8" plated ground rod. I would think it would out last and out perform a plated ground rod any day (although driving it in rocky soil might be a problem.)

On a slightly related issue, what is adequate for ground connections. I've seen everything from #10 aluminum wire to 1" or greater tinned braid

suggested. Is #8 or #6 copper adequate? Or is the braid from old RG-8 sufficient?

|>Use that metal panel in your window as your station single point
|>ground. Tie your power third wire to the panel too, and use a
|>power line suppressor at the panel if you can afford it. (I strongly
|>recomend this.)

What's a "power line suppressor"?

|>This isn't perfect, but it's about the best you can do short of
|>doing it right. If you keep everything reasonably straight and
|>well bonded, it should give good protection.

How does one bond something? I can find no reference to bonding in any of my handbooks.

Just looking to improve my grounding and lightning protection.

73,
Todd
N9MWB

Date: Mon, 26 Sep 1994 19:42:10 GMT
From: svc.portal.com!sdd.hp.com!hpscit.sc.hp.com!icon!greg@decwrl.dec.com
Subject: Grounding and Lightning Protection
To: ham-ant@ucsd.edu

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Use that metal panel in your window as your station single point
: ground. Tie your power third wire to the panel too, and use a
: power line suppressor at the panel if you can afford it. (I strongly
: recomend this.)

Won't you have problems with ground loops when you hook the house 3rd wire to a second ground? It's already grounded once at the service entrance, which in my case is clear on the other side of the house.

Also, by "power line suppressor at the panel" do you mean the service panel, or your tin box in the window. If it's the tin box, how do you hook it up?

Thanks,

Greg KD6KGW

Date: Mon, 26 Sep 1994 18:23:32 GMT
From: svc.portal.com!sdd.hp.com!col.hp.com!csn!bdewitt@decwrl.dec.com
Subject: NEC from DXF files?
To: ham-ant@ucsd.edu

I am about to launch into writing a program to convert .DXF graphics file
(most CAD programs output to this format) into wire lists for the
Numerical Electromagnetics Code. I have two questions:

1. Has it already been done and sitting out there somewhere?
2. If it's not, would anybody be interested in it as shareware (cheap)

Feel free to e-mail your answers. Thanks....

--
Brent G DeWitt (bdewitt@tuvps.com)
TUV Product Service
Boulder, CO USA
phone (303) 449-4165 fax (303) 449-3004

Date: 25 Sep 1994 15:14:16 -0400
From: ihnp4.ucsd.edu!swrinde!gatech!mailer.acns.fsu.edu!freenet3.scri.fsu.edu!
freenet3.scri.fsu.edu!not-for-mail@network.ucsd.edu
Subject: Slinky antenna anyone?
To: ham-ant@ucsd.edu

References: <35tnrj\$jg1@clarknet.clark.net>

Subject Slinky Antenna:
These are available at Antennas West 1500 North 150 West
Provo, Utah 84605.

jmona@freenet.scri.fsu.edu

Date: Mon, 26 Sep 94 13:48:47 -0500
From: news.delphi.com!usenet@uunet.uu.net
Subject: Wanted Cushcraft R-3
To: ham-ant@ucsd.edu

I am looking for a Cushcraft R-3 vertical in decent shape for a
decent price.
Please reply to NF8R@DELPHI.COM

73...DAVE

Date: 26 Sep 1994 13:57:07 GMT
From: news1.hh.ab.com!cle.ab.com!bjp@uunet.uu.net
Subject: What is a Good Satillite Antenna (2m/440)
To: ham-ant@ucsd.edu

Need recommendation of a good Satillite antenna. Is the cushcraft AOP-1 good? Or should I go for HyGain OSCARlink antenna. I have a friend who is selling the AOP-1 for \$80.

Also can I use this antenna system for UHF/VHF SSB contesting?

Please E-Mail at above address!

73,

Brian

Date: 26 SEP 94 16:22:29
From: pa.dec.com!mrnews.mro.dec.com!est.enet.dec.com!randolph@decwrl.dec.com
Subject: Yagi Antenna for UHF TV
To: ham-ant@ucsd.edu

In article <CwHt07.Epp@Newbridge.COM>, David_Malecki@qmail.Newbridge.com (David Malecki) writes...

>I have had relatively good results with a yagi that I built from plans
>in the ARRL handbook ('89 I think).

>

>My questions are:

>- does scaling work (I think it should)

Yes.

>- would changing from aluminum tubing to solid aluminum (for the
>reflector and directors) make a big difference in desired lengths (or general
> performance)

No. Think "skin effect". Most of the RF energy is very, very close to the surface, anyway.

>- how much performance (if any) would I loose by using a conducting boom such as aluminum (I'm currently using a wooden dowel,

Not much. The center of Yagi elements is at a null, so it doesn't matter that much what you attach it to. ARRL's Antenna Book has some sample Yagis built with and without attachment to a conducting boom, and it does make a small difference in the length of the elements for absolute best results.

>- is it worth going to a larger (more elements) antenna for a little extra gain? The picture is stable, and definitely watchable, but >definitely snowy too.

Depends... you need a MUCH bigger antenna to make a big difference in received signal. An unfortunate fact of antennas - the first 10dB of gain aren't too tough, the next 10dB, however... A preamp might help.

-Tom R. N100Q randolph@est.enet.dec.com

End of Ham-Ant Digest V94 #322
